

SUBSTITUTE FORM PTO-1449  
(MODIFIED)U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE.

ATTY. DOCKET NO. 043/015002

SERIAL NO. 08/482,933

INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT  
(Use several sheets if necessary)

APPLICANT: M. Allen Northrup et al.

FILING DATE: June 6, 1995

GROUP 1807

1634

(37 CFR 1.98(b))

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		PATENT NUMBER							ISSUE DATE	PATENTEE		CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
MKJN	AA	4	2	1	9	3	3	5	8/26/80	Ebersole		23	230 B	
MKJN	AB	4	5	9	6	6	9	7	6/24/86	Ballato		422	98	
MKJN	AC	4	5	9	8	0	4	9	7/1/86	Zelinka, et al.		435	287	
MKJN	AD	4	6	3	2	8	0	8	12/30/86	Yamamoto, et al.		422	72	
MKJN	AE	4	6	7	3	6	5	7	6/16/87	Christian		436	501	
MKJN	AF	4	6	7	6	2	7	4	6/30/87	Brown		137	806	
MKJN	AG	4	6	8	3	1	9	5	7/28/87	Mullis, et al.		435	6	
MKJN	AH	4	6	9	2	6	5	4	9/8/87	Umemura, et al.		310	334	
MKJN	AI	4	7	0	8	9	3	1	11/24/87	Christian		435	7	
MKJN	AJ	4	7	3	7	4	6	4	4/12/88	McConnell, et al.		436	43	
MKJN	AK	4	7	5	9	8	2	8	7/26/88	Young, et al.		204	1 T	
MKJN	AL	4	9	0	8	1	1	2	3/13/90	Pace		204	299 R	
MKJN	AM	4	9	2	0	0	5	6	4/24/90	Dasgupta		436	50	
MKJN	AN	4	9	5	2	2	6	6	8/28/90	Tsuruta, et al.		156	243	
MKJN	AO	4	9	6	0	4	8	6	10/02/90	Perkins, et al.		156	633	
MKJN	AP	4	9	6	3	4	9	8	10/16/90	Hillman, et al.		436	69	
MKJN	AQ	5	0	0	0	8	1	7	3/19/91	Aine		156	633	
MKJN	AR	5	0	0	3	8	2	2	4/2/91	Joshi		73	204.23	
MKJN	AS	5	0	0	6	7	4	9	4/9/91	White		310	323	
MKJN	AT	5	1	2	9	2	6	2	7/14/92	White, et al.		73	599	
MKJN	AU	5	2	1	2	9	8	8	5/25/93	White, et al.		73	599	
MKJN	AV	5	2	2	0	1	8	9	6/15/93	Higashi, et al.		257	467	
MKJN	AW	5	2	2	9	2	9	7	7/20/93	Schnipelsky, et al.		436	94	
MKJN	AX	5	2	5	2	2	9	4	10/12/93	Kroy, et al.		422	102	
MKJN	AY	5	2	7	0	1	8	3	12/14/93	Corbett, et al.		435	91.2	
MKJN	AZ	5	2	9	6	3	7	5	3/22/94	Kricka, et al.		435	291	
MKJN	AAA	5	3	0	4	4	8	7	4/19/94	Wilding, et al.		435	291	

EXAMINER *M. Allen Northrup*DATE CONSIDERED *3/30/98*

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ATTY. DOCKET NO. 07643/015002

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APPLICANT: M. Allen Northrup et al.

FILING DATE: June 6, 1995

GROUP 180T

1634

(37 CFR 1.98(b))

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		PATENT NUMBER							ISSUE DATE	PATENTEE		CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
MK	BA	5	3	8	5	7	0	9	1/31/95	Wise, et al.		422	98	
MK	BB	5	4	2	7	9	4	6	6/27/95	Kricka et al.		435	291	
MK	BC	5	4	8	6	3	3	5	1/23/96	Wilding, et al.		422	55	
MK	BD	5	4	9	8	3	9	2	3/12/96	Wilding, et al.		422	68.1	
	BE													
	BF													
	BG													

## FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION

		DOCUMENT NUMBER	PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
AM	BH	0 347 579 A2	5/16/89	EPO	B01L	3/00		X
AM	BI	0 381 501 B1	8/6/94	EPO	C12Q	1/68		
AM	BJ	0 385 964	1/9/90	EPO	C12M	1/40		X
AM	BK	0 402 995 A2	12/19/90	EPO	B01L	7/00		
AM	BL	0 483 117 A2	4/29/92	EPO	G01N	33/48		
AM	BM	2650657	2/8/91	France	F27B	17/02		X
AM	BN	DE 38 11 052 C1	8/24/89	Germany	H04R	1/20		
AM	BO	WO 91/16966	11/14/91	PCT	B01D	57/02		
	BP							
	BQ							
	BR							

## OTHER DOCUMENTS (including Author, Title, Date, Place of Publication)

AM	BS	Andle, J. et al., "Detection of Nucleic Acid Hybridization with an Acoustic Plate Mode Microsensor," <i>IEEE ULTRASONICS SYMPOSIUM</i> , Vol. 1, Honolulu, Hawaii, December 4-7, 1990, pp. 291-294.
AM	BT	Angell, James B., et al., "Silicon Micromechanical Devices," <i>Scientific American</i> , (April 1983) Vol. 248, No. 4, pp. 44-55
AM	BU	Backman, Keith, "Ligase Chain Reaction: Diagnostic Technology for the 1990s and Beyond," <i>Clinical Chemistry</i> , (1992) Vol. 38, No. 3, pp. 457-458.

EXAMINER	Andi Morales	DATE CONSIDERED	3/30/98
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APPLICANT: M. Allen Northrup et al.

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GROUP 18011634

(37 CFR 1.98(b))

## OTHER DOCUMENTS (including Author, Title, Date, Place of Publication)

AM	CA	Erlich, Henry A., ed., "PCR Technology, Principles and Applications for DNA Amplification," <i>PCR Technology</i> , M Stockton Press, (1989) pp. 32-38.
AM	CB	Esashi, Masayoshi, et al., "Integrated Flow Control Systems Fabricated on a Silicon Wafer," <i>Proceedings. Electrochemical Society Conference. III</i> (18-23 Oct. 1987) Electrochemical Society, Pennington, N.J. pp. 31-388.
AM	CC	Fromberz, Peter, et al., "Core-coat conductor of lipid bilayer and micromachined silicon," <i>Biochimica et Biophysica Acta</i> . (1991) Vol. 1062, pp. 103-107.
AM	CD	Gibbs, Richard A., "DNA Amplification by the Polymerase Chain Reaction," <i>Analytical Chemistry</i> , (July 1, 1990) Vol. 62, No. 13, pp. 1202-1214.
AM	CE	Heller, M. J., et al., "An Efficient Method for Extraction of DNA from Formalin-Fixed, Paraffin-Embedded Tissue by Sonication," <i>BioTechniques</i> , (1991) Research Report, Vol. 11, No. 3, pp. 372-374 and 476-477.
AM	CF	Higuchi, Russel, et al., "Simultaneous Amplification and Detection of Specific DNA Sequences," <i>Biotechnology</i> , (April 1992), Vol. 10, pp. 413-417.
AM	CG	Hoopman, Timothy L., "Microchanneled Structures," <i>Microstructures. Sensors and Actuators</i> , (1990) Cho, et al. Eds. The American Society of Mechanical Engineers (4 pages)
AM	CH	Howe, Roger T., et al., "Resonant-Microbridge Vapor Sensor," <i>IEEE Transactions on Electron Devices</i> , (April 1986) Vol. ED-33, No. 4, pp. 499-506
AM	CI	Howe, R.T., et al., "Silicon Micromechanics: sensors and actuators on a chip," <i>IEEE Spectrum</i> , July 1990, pp. 29-35.
AM	CJ	Kawasaki, Ernest S., "Sample Preparation from Blood, Cells, and Other Fluids," <i>PCR Protocols. A Guide to Methods and Applications</i> , (1990) Innis, Michael A., et al., ed., Academic Press, Inc., Chapter 18, pgs. 146-149
AM	CK	Kricka, et al., "Liquid Transport in Micron and Submicron Channels," <i>SPIK</i> , 1167:159-168 (1989).
AM	CL	Mandenius, Carl Fredrik, et al., "The Interaction of Proteins and Cells with Affinity Ligands Covalently Coupled to Silicon Surfaces as Monitored by Ellipsometry," <i>Analytical Biochemistry</i> , (1984) Vol. 137, pp. 106-114.
AM	CM	Manz, A., et al., "Micromachining of monocrystalline silicon and glass for chemical analysis systems," <i>Trends in Analytical Chemistry</i> , (1991) Vol. 10, No. 5, pp. 144-149.
AM	CN	Masuda, Senichi, et al., "Novel Method of Cell Fusion in Field Constriction Area in Fluid Integrated Circuit," <i>Proceedings IEEE/IAS Meeting</i> , (1987) pp. 1549-1553.
AM	CO	Oste, Christian, "Polymerase Chain Reaction," <i>BioTechniques</i> , (1988) Vol. 6, pp. 162-167
AM	CP	Parce, J. Wallace, et al., "Detection of Cell-Affecting Agents with a Silicon Biosensor," <i>Science</i> , (Oct. 13, 1989) Vol. 24, pp. 243-247
AM	CQ	Pfahler, P., et al., "Liquid Transport in Micron and Submicron Channels," <i>Sensors &amp; Actuators</i> , (1990) pp. 431-434.
	CR	

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Andrea Marash

DATE CONSIDERED

3/30/98

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Substitute Disclosure Form (PTO-1449)

SUBSTITUTE FORM PTO-1449 (MODIFIED)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 07043/015002	SERIAL NO. 08/482,933
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary)		APPLICANT: M. Allen Northrup et al.	
(37 CFR 1.98(b))		FILING DATE: June 6, 1995	GROUP 1801 1634

## OTHER DOCUMENTS (including Author, Title, Date, Place of Publication)

AM	DA	Sato, Kazuo, et al. "Individual and Mass Operation of Biological Cells using Micromechanical Silicon Devices," <i>Sensors and Actuators</i> , (1990) A21-A23:948-953
AM	DB	Senturia, Stephen D., et al., Section 2.5: Microprocessor Packaging, (Paper presented at the 14th Automotive Materials Conference, Ann Arbor, MI, U.S.A. November 19, 1986, pp. 185-191.) Reprinted with permission from <i>Sensors and Actuators</i> , Vol. 15, pp. 221-234, November 1988.
AM	DC	Shoji, Shuichi, et al. "Prototype Miniature Blood Gas Analyser Fabricated on a Silicon Wafer," <i>Sensors and Actuators</i> (1988), Vol. 15 pp. 101-107
AM	DD	Sundaram, Mani, et al., "New Quantum Structures," <i>Science</i> , November 29, 1991, Vol. 254, pp. 1326-1335.
AM	DE	Van Lintel, H.T.G., et al., "A Piezoelectric Micropump Based on Micromachining of Silicon," <i>Sensors and Actuators</i> , 15 (1988) pp. 153-167
AM	DF	Vossen, John L., et al. "Thin Film Processes," Copyright 1978 Academic Press, Inc., Chapter I-1, pg. 5 and Chapter III-2, pg. 309.
AM	DG	Washizu, Masao, et al., "Handling of Biological Cells Using Fluid Integrated Circuit," <i>Proceedings IEE/IAS Meeting</i> , (1988) pp. 1735-1740.
AM	DH	Wenzel, Stuart T., et al., "A Multisensor Employing an Ultrasonic Lamb-Wave Oscillator," <i>IEEE Transactions on Electron Devices</i> , June 1988, Vol. 35, No. 6, pp. 735-743.
DI		<del>White, R., U.S. Patent Application No. 07/162,193, filed February 29, 1998, now abandoned.</del>
DJ		<del>Whitesides, George M., "Molecular Self-Assembly and Nanochemistry: A Chemical Strategy for the Synthesis of Nanostructures," <i>Science</i>, Vol. 254, pp. 1312-1319.</del>
AM	DK	Wise, K.D., et al., "Microfabrication Techniques for Integrated Sensors and Microsystems," <i>Science</i> , (Nov. 29, 1991) Vol. 254, pp. 1335-1342.
AM	DL	Wittwer, Carl T., et al., "Minimizing the Time Required for DNA Amplification by Efficient Heat Transfer to Small Samples," <i>Analytical Biochemistry</i> , (1990) Vol. 186, pp. 328-331.
DM		
DN		
DO		
DP		
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